Amendments to the Specification

Entry of the following amendments is requested:

Please replace the paragraph beginning at line 7 of page 3 with the following amended paragraph:

More specifically, according to a first aspect of the present invention, the nozzle diameter, the work distance, and the nozzle immediately upstream pressure or blow impact pressure in the present state of the air blow nozzle are inputted as present state values. Unless otherwise indicated, all inputting steps described herein are performed by the operator. The compressed air consumption flow rate and the blow impact pressure or the nozzle immediately upstream pressure are computed by the system from the present state values. An improvement value of the nozzle diameter or the nozzle immediately upstream pressure is inputted on the basis of a judgment on the computation results. The compressed air consumption flow rate and the nozzle immediately upstream pressure or the nozzle diameter are computed from the improvement value a necessary number of times. Thus, a nozzle diameter and a nozzle immediately upstream pressure that provide the lowest compressed air consumption flow rate are selected.

Please replace the paragraph beginning at line 3 of page 9 with the following amended paragraph:

At step S2 in Fig. 1, present state values are inputted by the operator. When the "Present state input" button is clicked, the personal computer screen is changed to that shown in Fig. 8. Therefore, the following present state values are inputted in the input boxes shown in Fig. 8: ① type of nozzle (convergent nozzle or capillary nozzle) and nozzle length if "capillary nozzle" is chosen; ② nozzle diameter (nozzle inner diameter); ③ nozzle immediately upstream pressure or blow impact pressure; and ④ work distance. After confirming that there is no error in the inputted present state values in Fig. 8, the operator clicks the "Decide" button in the lower-right

corner of the screen. Consequently, the screen is changed to that shown in Fig. 7. Then, if the "Calculate" button is clicked, computation 1 at step S3 is executed.

Please replace the paragraph beginning at line 18 of page 9 with the following amended paragraph:

Computation 1 at step S3 is executed by the system according to the flowchart of Fig. 2. Each step shown in step S3 (i.e., S3-1, S3-2, etc.) is executed by the system. At step S3-1, a judgment is made as to which of "convergent nozzle" and "capillary nozzle" was chosen as a type of nozzle in the input ①. If it is judged at step S3-1 that "convergent nozzle" was chosen, a judgment is made at step S3-2 as to which of "nozzle immediately upstream pressure" and "blow impact pressure" was inputted in the input ③. If it is judged at step S3-2 that "nozzle immediately upstream pressure" was inputted, calculation of the blow impact pressure is performed at step S3-3 according to the equation shown in the box of step S3-3. If it is judged at step S3-2 that "blow impact pressure" was inputted, calculation of the nozzle immediately upstream pressure is performed at step S3-4 according to the equation shown in the box of step S3-4.

Please replace the paragraph beginning at line 3 of page 11 with the following amended paragraph:

At step S4 in Fig. 1, the result of computation 1 at step 3 is outputted by the system, and the value of the computation result is displayed in the box in the left-upper part of Fig. 7. Next, if the "Enter" button in Fig. 7 is clicked, the value (present state) of the computation result is entered in the table below the "Enter" button. In the input example of the present state values, the convergent nozzle inner diameter is 4 mm. The nozzle immediately upstream pressure is 0.02

MPa, and the work distance is 300 mm. The computed compressed air consumption flow rate is 121.39 dm^3/min (ANR). These values are displayed in the entry box (present state) in Fig. 7.

Please replace the paragraph beginning at line 4 of page 12 with the following amended paragraph:

At step S5 in Fig. 1, the data shown in the above described improvement 1 is inputted as an improvement value by the operator, and computation 2 is executed at step S6 by the system. Computation 2 at step S6 is executed according to the flowchart of Fig. 3. At step S6-1, a judgment is made as to whether "nozzle diameter" or "nozzle immediately upstream pressure" was inputted as an improvement value. If it is judged at step S6-1 that an improvement value of nozzle diameter was inputted, calculation of the nozzle immediately upstream pressure is performed at step S6-3 according to the equation shown in the box of step S6-3. Then, the process proceeds to step S6-4.

Please replace the paragraph beginning at line 25 of page 12 with the following amended paragraph:

At step S7 in Fig. 1, the output of computation 2 at step S6 is outputted by the system, and data (improvement 1) concerning the computation result is displayed in the box in the upper-left part of Fig. 7. It should be noted that in Fig. 7 the result of improvement 1 has already been displayed in the entry box.

Please replace the paragraph beginning at line 3 of page 13 with the following amended paragraph:

At step S8 in Fig. 1, a choice is made by the operator as to whether or not to enter the computation result of improvement 1. If the operator chooses to enter the computation result at step S8, the computation is entered at step S9. Then the process proceeds to step S10. If the

operator chooses not to enter the computation result at step S8, the process proceeds to step S10. A choice is made by the operator at S10 as to whether or not to change the present state. If the operator decides it is necessary to change the present state, the process returns to step S2. If the present state need not be changed, the process proceeds to step S11.

Please replace the paragraph beginning at line 14 of page 13 with the following amended paragraph:

Next, a choice is made by the operator at step S11 as to whether or not to print and magnetically store the computation results of step S8. If the operator chooses to print and magnetically store the computation results, the computation results are printed and magnetically stored by the system at step S12. If the operator chooses not to print and magnetically store the computation results, the process advances to step S13. At step S13, a choice is made by the operator as to whether or not to terminate the process. If YES is the answer, the process proceeds to "End". If the operator chooses not to terminate the process (i.e., a further improvement is needed), the process returns to step S5.

Please replace the paragraph beginning at line 28 of page 14 with the following amended paragraph:

At step S14 in Fig. 1, the operator is asked to choose between "New system" and "Present system evaluation." If "Present system evaluation" is chosen, present state values are inputted by the operator at step S15. Then, the process proceeds to step S16. In Fig. 9, "Present system evaluation" in the uppermost part of the left box is clicked, and present state values are successively inputted in input boxes below the display of "Present system evaluation". More specifically, the following values are inputted as present state values: ① nozzle diameter; ② number of nozzles; ③ one of the three, i.e., nozzle immediately upstream pressure, blow impact

pressure (and work distance), and pressure-reducing valve secondary pressure; ④ either one of "composite sonic conductance" (defined by ISO; when composite sonic conductance is inputted, critical pressure ratio is also inputted) and "composite effective sectional area" (defined by JIS) of the upstream piping system; ⑤ piping material (steel pipe or resin pipe); and ⑥ pipe length. It should be noted that "composite sonic conductance" and "composite effective sectional area" indicate the flowability of fluid in the upstream piping system. The critical pressure ratio is the pressure ratio at the boundary where choke flow and subsonic flow change from one to the other. The pressure ratio is [secondary pressure]/ [primary pressure].

Please replace the paragraph beginning at line 9 of page 16 with the following amended paragraph:

Computation 3 at step S17 is executed by the system according to the flowchart of Fig. 4. At step S17-1, a judgment is made as to which "Nozzle immediately upstream pressure", "Blow impact pressure" and "Pressure-reducing valve secondary pressure" was selected as the present state value ③. If it is judged at step S17-1 that "Nozzle immediately upstream pressure" was selected, calculation of the flow rate Q in the nozzle is performed at step S17-2 according to the equation shown in the box of step S17-2. Then, the process proceeds to step S17-3.

Please replace the paragraph beginning at line 5 of page 19 with the following amended paragraph:

The computation result obtained at step S17 in Fig. 1, i.e., the upstream pressure loss or the conductance ratio, is outputted by the system at step S18. Then, a judgment is made as to whether or not the computation result obtained at step S17 satisfies the set value (inputted by the operator at step S16) of the recommended circuit. If it is judged at step S19 that the computation

result obtained at step S17 satisfies the set value of the recommended circuit, the process proceeds to step S20. If NO is the answer at step S19, the process proceeds to step S23.

Please replace the paragraph beginning at line 28 of page 21 with the following amended paragraph:

At step S26, computation 5 is executed by the system according to the flowchart of Fig. 6, and the computation result is outputted at step S27. At step S26-1 in Fig. 6, calculation of the composite sonic conductance of the upstream piping system in the recommended circuit is performed according to the equation shown in the box of step S26-1. Subsequently, calculation of the conductance ratio is performed at step S26-2 according to the equation shown in the box of step 26-2. At step 26-3, the pressure-reducing valve secondary pressure is set equal to the nozzle immediately upstream pressure P0. At step S26-4, calculation of the flow rate Q0 in the upstream piping system is performed according to the equation shown in the box of step S26-4. Then, a judgment is made at step S26-5 as to whether the flow rate Q0 in the upstream piping system is not less than the flow rate Q in the nozzle. If it is judged at step S26-5 that the flow rate Q0 is not less than the flow rate Q, calculation of the upstream pressure loss in the recommended circuit is performed at step S26-7 according to the equation shown in the box of step S26-7. Then, the process proceeds to step S27 in Fig. 1. If it is judged at step S26-5 that the flow rate Q0 is less than the flow rate Q, P1 is set equal to P1+0.001 at step S26-6. Then, the process returns to step S26-4.